

200313046-1

10/719,222

REMARKS

This is a full and timely response to the final Official Action mailed 1 August 2005. Applicant hereby requests Continued Examination of the application and offers the foregoing amendments. Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

Claims Status:

By the forgoing amendment, various claims have been amended. No claims are cancelled. New claim 53 is added. Thus, claims 1-24, 31-40 and 47-53 are currently pending for further action.

Claim Objections:

Claim 52 was objected to due to a minor informality. Claim 52 has been amended herein to correct the informality noted. This amendment is not intended to, and does not, alter or narrow the scope of claim 52 in any way. Following entry of this amendment, claim 52 is thought to be no longer subject to objection and notice to that effect is respectfully requested.

Prior Art:

With regard to the prior art, claims 1, 4-7, 13, 16-19 31-33 and 35-40 were rejected as anticipated under 35 U.S.C. § 102(b) by Meier et al. For at least the following reasons, this rejection is respectfully traversed.

Claim 1 recites:

A micro-mirror device comprising:
a micro-mirror; and

200313046-1

10/719,222

a flexure spring supporting said micro-mirror, said flexure spring having supports thereon that are attached to said micro-mirror and that space said micro-mirror from said flexure spring;

wherein said flexure spring is configured to store potential energy during movement of said micro-mirror that is released as kinetic energy to drive movement of said micro-mirror when said micro-mirror is re-oriented.
(emphasis added).

Claim 13 similarly recites:

An array of micro-mirrors comprising:
a plurality of micro-mirrors; and

a flexure spring supporting each said micro-mirror, each said flexure spring having supports thereon that are attached to a corresponding micro-mirror;

wherein each said flexure spring is configured to store potential energy during movement of a corresponding micro-mirror that is released as kinetic energy to drive movement of said corresponding micro-mirror when said corresponding micro-mirror is re-oriented.
(emphasis added).

In contrast, Meier does not teach or suggest a flexure spring supporting a micro-mirror having supports thereon that are attached to the micro-mirror. "A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least this reason, the rejection of claims 1-24 should be reconsidered and withdrawn.

Independent claim 31 recites:

A spatial light modulation device comprising:
a micro-mirror; and

a pliant flexure supporting said micro-mirror, said flexure having a bias;
wherein said flexure stores energy due to said bias in response to any re-positioning of said micro-mirror away from a default orientation; and
wherein said flexure releases said stored energy to drive movement of said micro-mirror when a force against said bias is relaxed.

(emphasis added).

200313046-1

10/7/19,222

In contrast, Meier does not teach or suggest a flexure that stores energy in response to *any* re-positioning of a micro-mirror away from a default orientation, i.e., a biased position. Referring to Figs 4-7 of Meier, the only element of Meier that could qualify as a "flexure spring" is the "spring" (328). This spring (328) surrounds a "rigid" yoke (314) (Meier, Abstract) and is supported on a torsion beam (320) attached to the yoke (314).

However, the micro-mirror and spring do not even have any contact, as shown in Figs. 5-7, unless the mirror is deflected by more than a particular minimal amount. Thus, the spring (328) of Meier cannot "store energy due to said bias in response to *any* re-positioning of said micro-mirror" as claimed. (emphasis added). As shown in Figs. 5-7, re-positioning of the micro-mirror may occur over a range of motion before the micro-mirror even comes into contact with the spring (328) and any energy is stored therein. Consequently, Meier does not teach or suggest the claimed flexure that "stores energy due to said bias in response to *any* re-positioning of said micro-mirror away from a default orientation."

Again, "[a] claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least this reason, the rejection of claim 31-40 should be reconsidered and withdrawn.

Claims 47-52 were rejected as anticipated under 35 U.S.C. § 102(e) by U.S. Patent Application Publication No. 2005/0128564 to Pan ("Pan"). This rejection is respectfully traversed for at least the following reasons.

200313046-1

10/7/19,222

Claim 47 recites:

A micro-mirror device comprising:
a micro-mirror; and
a flexure spring, wherein said micro-mirror is supported on arms of said flexure spring, *with supports connected between said arms and opposite corners of said micro-mirror,*
wherein said flexure spring comprises *a plurality of flexures disposed side-by-side, substantially parallel to each other and extending toward opposite corners of said micro-mirror,*
wherein said flexure spring is configured to store potential energy during movement of said micro-mirror that is released as kinetic energy to drive movement of said micro-mirror when said micro-mirror is re-oriented.
(emphasis added).

In contrast, Pan does not teach or suggest a flexure spring with arms that support a micro-mirror *with supports connected between said arms and opposite corners of said micro-mirror*. Rather, Pan teaches a "torsion hinge (106)" that is "embedded" in the rear of the micro-mirror. (Pan, Figs. 1A and 1B, paragraph 0017). Thus, Pan does not, and cannot, teach or suggest the claimed supports connected between arms of a flexure spring and opposite corners of a micro-mirror.

Additionally, Pan fails to teach or suggest the claimed plurality of flexures disposed side-by-side, substantially parallel to each other and extending toward opposite corners of said micro-mirror. Pan contains no such teaching.

Again, "[a] claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least these reasons, the rejection of claim 47-52 should be reconsidered and withdrawn.

Additionally, Pan may be removed as valid prior art against the present application. Pan is a publication of an application filed 26 October 2004 that claims priority to a

200313046-1

10/719,222

provisional filed 27 October 2003. The present application was filed less than a month later on 21 November 2003.

However, Applicant invented and had possession of the invention here claimed prior to the filing of the earliest Pan application on 27 October 2003. The undersigned hereby declares under 37 C.F.R. § 1.132 that documents in possession of the undersigned demonstrate that the Applicant had invented and had possession of the invention here claimed at least as early as 21 May 2003. These documents illustrate and describe the subject matter here claimed in sufficient detail to enable one of skill in the art to practice the same.

For at least this additional reason, the rejections in the final Office Action based on Pan should be reconsidered and withdrawn. If necessary, Applicant can provide a supporting declaration under 37 C.F.R. § 1.131 in support of the unavailability of Pan as prior art against the present application.

Claims 2, 9-12, 14 and 21-24 were rejected as unpatentable under 35 U.S.C. § 103(a) over Meier in view of Pan. This rejection is respectfully traversed for at least the same reasons given above with respect to the independent claims.

Claims 3, 15 and 34 were rejected as unpatentable under 35 U.S.C. § 103(a) over Meier in view of U. S. Patent No. 5,066,084 to Culp ("Culp"). This rejection is respectfully traversed for at least the same reasons given above with respect to the independent claims.

Claims 8 and 20 were rejected as unpatentable under 35 U.S.C. § 103(a) over Meier in view of U.S. Patent No. 6,633,426 to Shrauger et al. ("Shrauger"). This rejection is

200313046-1

10/7/19,222

respectfully traversed for at least the same reasons given above with respect to the independent claims.


Conclusion:

Newly added claim 53 is thought to be patentable over the prior art of record for at least the same reasons given above with respect to the original independent claims. Therefore, examination and allowance of the newly added claim 53 is respectfully requested.

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

DATE: 29 September 2005

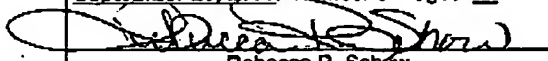

Steven L. Nichols
Registration No. 40,326

Steven L. Nichols, Esq.
Managing Partner, Utah Office
Rader Fishman & Grauer PLLC
River Park Corporate Center One
10653 S. River Front Parkway, Suite 150
South Jordan, Utah 84095

(801) 572-8066
(801) 572-7666 (fax)

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office facsimile number ~~571-273-8300~~ on September 29, 2005. Number of Pages: 23


Rebecca R. Schow